



## Annual Report of Operations for Year 2020

**To comply with NPDES General Permit No. WAG130000 for Federal  
Aquaculture Facilities and Aquaculture Facilities Located in Indian  
Country within the Boundaries of the State of Washington**

NPDES # for your Facility:

WAG 130008

### Facility & Owner Information

Facility Name: <u>WINTHROP NATIONAL FISH HATCHERY</u>	
Operator Name (Permittee): <u>UNITED STATES FISH &amp; WILDLIFE SERVICE</u>	
Address: <u>PHYSICAL - 453A TWIN LAKES RD, WINTHROP, WA 98842</u> <u>MAILING - PO BOX 429, WINTHROP, WA 98842</u>	
Email: <u>sara-reese@fws.gov; chris-pasley@fws.gov</u>	Phone: <u>509.996.2424</u>
Owner Name (if different from operator):	
Email:	Phone:

### Best Management Practices (BMP) Plan

Has the BMP Plan been reviewed this year? ☒ Yes ☐ No

Does the BMP Plan fulfill the requirements of the General Permit? ☒ Yes ☐ No

Summarize any changes to the BMP Plan since the last annual report. Attach additional pages if necessary.

Added INAD use of emamectin.

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# EPA General Permit WAG130000 - Annual Report

## Operations and Production

Total harvestable weight produced in the past calendar year in pounds (lbs): 73,702  
Pounds of food fed to fish during the maximum month: 11,081

List the species grown or held at your facility and the annual production of each in gross harvestable weight. If fish were released rather than harvested, list the weight at time of release.

Species	Fish Produced	Receiving Water(s) to which Fish were Released	Month Released/Spawned
Coho salmon	15,426	Methow River	March & May
Spring Chinook	22,078	Methow River	April
Summer Steelhead	36,198	Methow & Twisp Rivers leader Lake	April & May

Fill in the table below with production numbers from the past year. List the **maximum** amount of fish on-site and the maximum amount of food fed **per month**.

Month	Total Fish (lbs)	Fish Feed (lbs)	Month	Total Fish (lbs)	Fish Feed (lbs)
January	55,609	1,502	July	22,013	7,507
February	58,499	2,397	August	35,458	11,081
March	70,805	11,424	September	48,484	10,913
April	52,385	8,476	October	52,437	4,399
May	7,731	2,092	November	56,683	3,565
June	12,931	4,338	December	59,371	2,563

### Additional Comments:

Releases that occurred in May for summer steelhead and coho salmon were voluntary releases (fish may leave over a several week period). There is no way to quantify how many of these fish are present at any given time. Maximum fish present in May represents fish that are not part of the voluntary release.

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## Solid Waste Disposal

Describe the solid waste disposed of during the calendar year (including fish mortalities).

Type of Solid Disposed	Date Disposed	Location Disposed
Daily fish mortalities	Daily	Buried in station mort pit.
Spawned adult carcasses	Weekly in April, May, August, October, + November	Buried in station mort pit
Dead fish eggs	June, October, + December	Buried in station mort pit
Additional Comments:		

## Fish Mortalities

Include a description and the dates of mass mortalities in the past year (more than 5% per week). Attach additional pages, if necessary. Include total mortalities from all causes.

Date	Cause of Deaths	Steps Taken to Correct Problem	Pounds of Fish
None			
Additional Comments:			

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## Noncompliance Summary

Include a description and the dates of noncompliance events (including spills), the reasons for the incidents, and the steps taken to correct the problems. Attach additional pages, if necessary.

None

## Inspections & Repairs for Production & Wastewater Treatment Systems

Date Inspected	Date Repaired	Description of System Inspected and/or Repaired	
None			

### Aquaculture Drugs and Chemicals

Please indicate whether you used each drug/chemical **during the past calendar year**.

Describe the use of each drug/chemical in more detail on the following pages.

Used in the past year?	Drug or Chemical
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Azithromycin
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Chloramine-T: <i>See additional reporting requirements on page 7</i>
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Chlorine
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Draxxin
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Erythromycin - injectable
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Erythromycin - medicated feed
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Florfenicol (Aquaflor)
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Formalin - 37% formaldehyde: <i>See additional reporting requirements on page 7</i>
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Herbicide - describe:
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Hormone - describe: LHRH
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Hydrogen Peroxide: <i>See additional reporting requirements on page 7</i>
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Iodine: <i>See additional reporting requirements on page 7</i>
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Oxytetracycline
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Potassium Permanganate: <i>See additional reporting requirements on page 7</i>
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Romet
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	SLICE (emamectin benzoate)
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Sodium Chloride - salt
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Vibrio vaccine
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Other: AQUI-S 20E

☒ Yes  
☐ No

Other: AQUADES

## Aquaculture Drugs and Chemicals (cont'd)

Describe all drug and/or chemical treatments that occurred during the year. Fill out the information below for each drug or chemical, plus page 7 for water-borne treatments. Attach additional pages as necessary.

Brand Name: <u>AQUI-S 20E</u>		Generic Name: <u>AQUI-S 20E (10% Eugenol)</u>	
Reason for use: <u>safe and effective handling of adult summer steelhead</u>			
<input type="checkbox"/> Preventative/Prophylactic <input checked="" type="checkbox"/> As-needed	Total quantity of formulated product per treatment (specify units): <u>15 mL</u>	Total quantity of formulated product used in past year (specify units): <u>510 mL</u>	
Date(s) of treatment: <u>02/05/2020 - 04/14/2020</u>			Total number of treatments in past year: <u>34</u>
Maximum daily volume of treated water: <u>20 gallons</u>	Treatment concentration (specify units): <u>19.7 ppm</u>	Duration and frequency of treatment(s): <u>Used as needed</u> <u>Length varied by # of fish handled</u>	
Method of application:	<input checked="" type="checkbox"/> Static Bath <input type="checkbox"/> Flow-through	<input type="checkbox"/> Medicated Feed <input type="checkbox"/> Other (describe):	
Location in facility chemical was used (check all that apply):	<input type="checkbox"/> Raceways <input type="checkbox"/> Incubation building	<input type="checkbox"/> Ponds <input type="checkbox"/> Off-line settling basin	<input checked="" type="checkbox"/> Other (describe): <u>Large cooler</u>
Where did water treated with this chemical go? (check all that apply):	<input type="checkbox"/> Discharged w/o treatment <input checked="" type="checkbox"/> Settling basin	<input type="checkbox"/> Septic System <input type="checkbox"/> Publicly owned treatment works	<input type="checkbox"/> Other (describe):
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:			
Brand Name: <u>AQUADES</u>		Generic Name: <u>peracetic acid</u>	
Reason for use: <u>disinfection of adult holding ponds</u>			
<input checked="" type="checkbox"/> Preventative/Prophylactic <input type="checkbox"/> As-needed	Total quantity of formulated product per treatment: <u>55 gallons</u>	Total quantity of formulated product used in past year (specify units): <u>55 gallons</u>	
Date(s) of treatment: <u>05/27/2020</u>			Total number of treatments in past year: <u>1</u>
Maximum daily volume of treated water: <u>80,000 gallons</u>	Treatment concentration (specify units): <u>36.3 ppm</u>	Duration and frequency of treatment(s): <u>1 time per year</u> <u>20 hours</u>	
Method of application:	<input checked="" type="checkbox"/> Static Bath <input type="checkbox"/> Flow-through	<input type="checkbox"/> Medicated Feed <input type="checkbox"/> Other (describe):	
Location in facility chemical was used (check all that apply):	<input checked="" type="checkbox"/> Raceways <u>adult holding</u> <input type="checkbox"/> Incubation building	<input type="checkbox"/> Ponds <input type="checkbox"/> Off-line settling basin	<input type="checkbox"/> Other (describe):
Where did water treated with this chemical go? (check all that apply):	<input checked="" type="checkbox"/> Discharged w/o treatment <input type="checkbox"/> Settling basin	<input type="checkbox"/> Septic System <input type="checkbox"/> Publicly owned treatment works	<input type="checkbox"/> Other (describe):

Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:

Length of storm water runoff prevented by use of liner.  
Test strips verified that product had degraded.



## Aquaculture Drugs and Chemicals (cont'd)

Describe all drug and/or chemical treatments that occurred during the year. Fill out the information below for each drug or chemical, plus page 7 for water-borne treatments. Attach additional pages as necessary.

Brand Name: <u>Ovadine</u>		Generic Name: <u>Buttered pup iodine</u>	
Reason for use: <u>Disinfection of fertilized fish eggs</u>			
<input checked="" type="checkbox"/> Preventative/Prophylactic <input type="checkbox"/> As-needed	Total quantity of formulated product per treatment (specify units): <u>56 mL per tray</u>	Total quantity of formulated product used in past year (specify units): <u>25,200 mL</u>	
Date(s) of treatment: <u>1 x per week from 04/15/20 → 05/20/20</u> " " <u>08/12/20 → 09/02/20</u> " " <u>10/19/20 → 11/23/20</u>			Total number of treatments in past year: <u>16</u>
Maximum daily volume of treated water: <u>182 gallons</u>	Treatment concentration (specify units): <u>73.7 ppm</u>	Duration and frequency of treatment(s): <u>25 mins. per treatment</u> <u>treatments 1 day per week</u>	
Method of application:	<input checked="" type="checkbox"/> Static Bath <input type="checkbox"/> Flow-through	<input type="checkbox"/> Medicated Feed <input type="checkbox"/> Other (describe):	
Location in facility chemical was used (check all that apply):	<input type="checkbox"/> Raceways <input checked="" type="checkbox"/> Incubation building	<input type="checkbox"/> Ponds <input type="checkbox"/> Off-line settling basin <input type="checkbox"/> Other (describe):	
Where did water treated with this chemical go? (check all that apply):	<input type="checkbox"/> Discharged w/o treatment <input checked="" type="checkbox"/> Settling basin	<input type="checkbox"/> Septic System <input type="checkbox"/> Publicly owned treatment works <input type="checkbox"/> Other (describe):	
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use: <u># of trays per treatment varied from 1 to 9. Total quantity per treatment varied from 56 mL to 5096 mL, based on # of trays.</u>			
Brand Name: <u>Luteinizing hormone releasing hormone</u>		Generic Name: <u>LHRH</u>	
Reason for use: <u>accelerate ripeness of adult steelhead females</u>			
<input type="checkbox"/> Preventative/Prophylactic <input checked="" type="checkbox"/> As-needed	Total quantity of formulated product per treatment: <u>15 mg/kg fish wt.</u>	Total quantity of formulated product used in past year (specify units): <u>0.925 mg</u>	
Date(s) of treatment: <u>04/22/2020, 04/29/2020, 05/06/2020</u>			Total number of treatments in past year: <u>3</u>
Maximum daily volume of treated water: <u>0 gallons</u>	Treatment concentration (specify units): <u>15 mg/kg fish wt.</u>	Duration and frequency of treatment(s): <u>25 total fish injected</u>	
Method of application:	<input type="checkbox"/> Static Bath <input type="checkbox"/> Flow-through	<input type="checkbox"/> Medicated Feed <input checked="" type="checkbox"/> Other (describe): <u>Injection</u>	
Location in facility chemical was used (check all that apply):	<input checked="" type="checkbox"/> Raceways <u>adult holding</u> <input type="checkbox"/> Incubation building	<input type="checkbox"/> Ponds <input type="checkbox"/> Off-line settling basin <input type="checkbox"/> Other (describe):	
Where did water treated with this chemical go? (check all that apply):	<input type="checkbox"/> Discharged w/o treatment <input type="checkbox"/> Settling basin	<input type="checkbox"/> Septic System <input type="checkbox"/> Publicly owned treatment works <u>N/A</u>	

Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:

## Aquaculture Drugs and Chemicals (cont'd)

Describe all drug and/or chemical treatments that occurred during the year. Fill out the information below for each drug or chemical, plus page 7 for water-borne treatments. Attach additional pages as necessary.

Brand Name: <i>Parasite-S</i>		Generic Name: <i>Formalin (37% Formaldehyde)</i>	
Reason for use: <i>Inhibit fungal growth on adult broodstock</i>			
<input checked="" type="checkbox"/> Preventative/Prophylactic <input type="checkbox"/> As-needed	Total quantity of formulated product per treatment (specify units): <i>3.6 gallons</i>	Total quantity of formulated product used in past year (specify units): <i>306 gallons</i>	
Date(s) of treatment: <i>02/28/20 → 05/18/20 10/2/20 → 11/20/20</i> <i>06/29/20 → 08/31/20</i>			Total number of treatments in past year: <i>85</i>
Maximum daily volume of treated water: <i>18,000 gallons</i>	Treatment concentration (specify units): <i>199.2 ppm</i>	Duration and frequency of treatment(s): <i>1 hour, 3 days per week</i>	
Method of application:	<input type="checkbox"/> Static Bath <input checked="" type="checkbox"/> Flow-through	<input type="checkbox"/> Medicated Feed <input type="checkbox"/> Other (describe):	
Location in facility chemical was used (check all that apply):	<input checked="" type="checkbox"/> Raceways <i>adult holding</i> <input type="checkbox"/> Incubation building	<input type="checkbox"/> Ponds <input type="checkbox"/> Off-line settling basin <input type="checkbox"/> Other (describe):	
Where did water treated with this chemical go? (check all that apply):	<input checked="" type="checkbox"/> Discharged w/o treatment <input type="checkbox"/> Settling basin	<input type="checkbox"/> Septic System <input type="checkbox"/> Publicly owned treatment works <input type="checkbox"/> Other (describe):	
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:			
Brand Name: <i>Parasite-S</i>		Generic Name: <i>Formalin (37% Formaldehyde)</i>	
Reason for use: <i>Costia</i>			
<input checked="" type="checkbox"/> Preventative/Prophylactic <input type="checkbox"/> As-needed	Total quantity of formulated product per treatment: <i>1.68 gallons</i>	Total quantity of formulated product used in past year (specify units): <i>13.4 gallons</i>	
Date(s) of treatment: <i>10/28/20, 10/29/20, 11/03/20, 11/06/20</i>			Total number of treatments in past year: <i>8</i>
Maximum daily volume of treated water: <i>18,000 gallons</i>	Treatment concentration (specify units): <i>185.9 ppm</i>	Duration and frequency of treatment(s): <i>1 hour</i>	
Method of application:	<input type="checkbox"/> Static Bath <input checked="" type="checkbox"/> Flow-through	<input type="checkbox"/> Medicated Feed <input type="checkbox"/> Other (describe):	
Location in facility chemical was used (check all that apply):	<input checked="" type="checkbox"/> Raceways <input type="checkbox"/> Incubation building	<input type="checkbox"/> Ponds <input type="checkbox"/> Off-line settling basin <input type="checkbox"/> Other (describe):	
Where did water treated with this chemical go? (check all that apply):	<input type="checkbox"/> Discharged w/o treatment <input checked="" type="checkbox"/> Settling basin	<input type="checkbox"/> Septic System <input type="checkbox"/> Publicly owned treatment works <input type="checkbox"/> Other (describe):	

Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:

## Aquaculture Drugs and Chemicals (cont'd)

Describe all drug and/or chemical treatments that occurred during the year. Fill out the information below for each drug or chemical, plus page 7 for water-borne treatments. Attach additional pages as necessary.

Brand Name: <u>American Stockman Mixing Salt</u>		Generic Name: <u>Salt</u>	
Reason for use: <u>Costia</u>			
<input checked="" type="checkbox"/> Preventative/Prophylactic <input type="checkbox"/> As-needed	Total quantity of formulated product per treatment (specify units): <u>77.5 lbs</u>	Total quantity of formulated product used in past year (specify units): <u>235 lbs</u>	
Date(s) of treatment: <u>05/09/20, 05/12/20, 05/15/20</u>			Total number of treatments in past year: <u>3</u>
Maximum daily volume of treated water: <u>333 gallons</u>	Treatment concentration (specify units): <u>2.79%</u>	Duration and frequency of treatment(s): <u>1 hour, once per day</u>	
Method of application:	<input checked="" type="checkbox"/> Static Bath <input type="checkbox"/> Flow-through	<input type="checkbox"/> Medicated Feed <input type="checkbox"/> Other (describe):	
Location in facility chemical was used (check all that apply):	<input type="checkbox"/> Raceways <input checked="" type="checkbox"/> Incubation building	<input type="checkbox"/> Ponds <input type="checkbox"/> Off-line settling basin <input type="checkbox"/> Other (describe):	
Where did water treated with this chemical go? (check all that apply):	<input type="checkbox"/> Discharged w/o treatment <input checked="" type="checkbox"/> Settling basin	<input type="checkbox"/> Septic System <input type="checkbox"/> Publicly owned treatment works <input type="checkbox"/> Other (describe):	
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:			
Brand Name: <u>American Stockman Mixing Salt</u>		Generic Name: <u>Salt</u>	
Reason for use: <u>External pathogens on steelhead kelts</u>			
<input checked="" type="checkbox"/> Preventative/Prophylactic <input type="checkbox"/> As-needed	Total quantity of formulated product per treatment: <u>11.5 lbs</u>	Total quantity of formulated product used in past year (specify units): <u>1,817 lbs</u>	
Date(s) of treatment: <u>April 6-8, 10-12, 14-16, 18-20, 22-24, 26-28, 30</u> <u>MAY 1-2, 4-6, 8-14, 16-18, 20-22, 24-31</u> <u>June 1-3, 5-7, 9-11, 13-30</u> <u>July 1-31 Aug 1-2, 4-6, 8-10, 12-31</u>			Total number of treatments in past year: <u>378</u>
Maximum daily volume of treated water: <u>5,086 gallons</u>	Treatment concentration (specify units): <u>543 ppm</u>	Duration and frequency of treatment(s): <u>1 hour per day</u>	
Method of application:	<input type="checkbox"/> Static Bath <input checked="" type="checkbox"/> Flow-through	<input type="checkbox"/> Medicated Feed <input type="checkbox"/> Other (describe):	
Location in facility chemical was used (check all that apply):	<input type="checkbox"/> Raceways <input type="checkbox"/> Incubation building	<input checked="" type="checkbox"/> Ponds <input type="checkbox"/> Off-line settling basin <input type="checkbox"/> Other (describe):	
Where did water treated with this chemical go? (check all that apply):	<input type="checkbox"/> Discharged w/o treatment <input checked="" type="checkbox"/> Settling basin	<input type="checkbox"/> Septic System <input type="checkbox"/> Publicly owned treatment works <input type="checkbox"/> Other (describe):	

Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:

Kelt building contains 4 tanks, different tanks treated on different days.

## Aquaculture Drugs and Chemicals (cont'd)

Describe all drug and/or chemical treatments that occurred during the year. Fill out the information below for each drug or chemical, plus page 7 for water-borne treatments. Attach additional pages as necessary.

Brand Name: <u>parasite-S</u>		Generic Name: <u>Formalin (37.1. Formaldehyde)</u>	
Reason for use: <u>external pathogens on steelhead kelts</u>			
<input checked="" type="checkbox"/> Preventative/Prophylactic <input type="checkbox"/> As-needed	Total quantity of formulated product per treatment (specify units): <u>1.38 liters</u>	Total quantity of formulated product used in past year (specify units): <u>353.28 liters</u>	
Date(s) of treatment: <u>April 5, 9, 15-17, 20-30 May 1-10, 12-15, 18-20, June 1-4, 7-8, 12-13, 16-18, 21-23, 27-28 23-25, 27-30 July 1-3, 6-7, 10-11, 14-15, 18-20, 22-23, 26-27, 31</u>			Total number of treatments in past year: <u>256</u>
Maximum daily volume of treated water: <u>31,800 liters</u>	Treatment concentration (specify units): <u>163.9 ppm</u>	Duration and frequency of treatment(s): <u>1 hour</u>	
Method of application:	<input type="checkbox"/> Static Bath <input checked="" type="checkbox"/> Flow-through	<input type="checkbox"/> Medicated Feed <input type="checkbox"/> Other (describe):	
Location in facility chemical was used (check all that apply):	<input type="checkbox"/> Raceways <input type="checkbox"/> Incubation building	<input checked="" type="checkbox"/> Ponds <input type="checkbox"/> Off-line settling basin <input type="checkbox"/> Other (describe):	
Where did water treated with this chemical go? (check all that apply):	<input type="checkbox"/> Discharged w/o treatment <input checked="" type="checkbox"/> Settling basin	<input type="checkbox"/> Septic System <input type="checkbox"/> Publicly owned treatment works <input type="checkbox"/> Other (describe):	
Provide any additional information about how this chemical was used and/or special pollution prevention practices during use: <u>August 1, 5-6, 10-11, 14-16, 18, 20-22, 25-26, 31 Sept 1, 5-6, 10-11, 15-16, 20-21, 25-26, Oct 1, 5-6, 10-11, 15-16, 18, 21-22, 24, 26-27, 29-31 Nov 1, 5-6, 9, 14-15, 19, 25, 30 30</u>			
Brand Name: <u>SLICE</u>		Generic Name: <u>emamectin benzoate</u>	
Reason for use: <u>freshwater copepod ectoparasites (salmincola californiensis)</u>			
<input type="checkbox"/> Preventative/Prophylactic <input checked="" type="checkbox"/> As-needed	Total quantity of formulated product per treatment: <u>1.9 grams</u>	Total quantity of formulated product used in past year (specify units): <u>13.3 grams</u>	
Date(s) of treatment: <u>August 7-13</u>			Total number of treatments in past year: <u>1</u>
Maximum daily volume of treated water: <u>0</u>	Treatment concentration (specify units): <u>50 mg/kg fish/day</u>	Duration and frequency of treatment(s): <u>7 day treatment once per year</u>	
Method of application:	<input type="checkbox"/> Static Bath <input type="checkbox"/> Flow-through	<input checked="" type="checkbox"/> Medicated Feed <input type="checkbox"/> Other (describe):	
Location in facility chemical was used (check all that apply):	<input type="checkbox"/> Raceways <input type="checkbox"/> Incubation building	<input checked="" type="checkbox"/> Ponds <input type="checkbox"/> Off-line settling basin <input type="checkbox"/> Other (describe):	
Where did water treated with this chemical go? (check all that apply):	<input type="checkbox"/> Discharged w/o treatment <input type="checkbox"/> Settling basin	<input type="checkbox"/> Septic System <input type="checkbox"/> Publicly owned treatment works <input type="checkbox"/> Other (describe):	

Provide any additional information about how this chemical was used and/or special pollution prevention practices during use:



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**Aquaculture Drugs and Chemicals (cont'd)**

***Additional Reporting Requirements for Water-Borne Treatments***

- If a water-borne treatment was used during the calendar year, Permittees must include detailed records/calculations as an attachment to this Annual Report in order to demonstrate how the maximum effluent concentrations of solution and active ingredient were calculated for each chemical.
- EPA recognizes that water-borne treatments may vary in the volume of the vessels treated, concentration, quantity of product, etc. Permittees must provide the information listed in the following tables for a reasonable worst case (i.e., maximum effluent concentration) scenario, not for each individual treatment.
- Permittees must submit this information and calculate the maximum effluent concentration for each water-borne chemical used during the past calendar year.
- See also Appendix D for the Chemical Log Sheet.

Static Bath Treatments	
Tank Volume	Liters
Desired Static Bath Treatment Concentration	µg/L
Volume of Product Needed	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: Active Ingredient: Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	Specify Units
Maximum % of Facility Discharge Treated	% of Total Discharge

  

Flow-Through Treatments Formalin - costia	
Tank Volume	42419 Liters
Calculated Flow Rate	538.5 Liters/Minute
Duration of Treatment	60 Minutes
Desired Flow-Through Treatment Concentration of Product	185.9 ppm µg/L
Amount of Product to Add Initially	N/A Liters Product
Amount of Product to Add During Treatment	106 mL/Minute
Total Volume of Product Needed	6.4 Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: 0.00004 ppm Active Ingredient: 0.00004 ppm Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	16,161,120 gallons Specify Units
Maximum % of Facility Discharge Treated	0.11 % of Total Discharge

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**Aquaculture Drugs and Chemicals (cont'd)**

**Additional Reporting Requirements for Water-Borne Treatments**

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- Permittees must submit this information and calculate the maximum effluent concentration for each water-borne chemical used during the past calendar year.
- See also Appendix D for the Chemical Log Sheet.

Static Bath Treatments	
Tank Volume	Liters
Desired Static Bath Treatment Concentration	µg/L
Volume of Product Needed	Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: Active Ingredient: Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	Specify Units
Maximum % of Facility Discharge Treated	% of Total Discharge

  

Flow-Through Treatments Formalin - Keit <sup>1</sup> building	
Tank Volume	9129 Liters
Calculated Flow Rate	125.65 Liters/Minute
Duration of Treatment	40 Minutes
Desired Flow-Through Treatment Concentration of Product	163.9 ppm µg/L
Amount of Product to Add Initially	N/A Liters Product
Amount of Product to Add During Treatment	21.8 mL/Minute
Total Volume of Product Needed	1.38 Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: 0.000636 ppm Active Ingredient: 0.000036 ppm Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	7,057,440 gallons Specify Units
Maximum % of Facility Discharge Treated	0.07% % of Total Discharge

**Aquaculture Drugs and Chemicals (cont'd)*****Additional Reporting Requirements for Water-Borne Treatments***

- If a water-borne treatment was used during the calendar year, Permittees must include detailed records/calculations as an attachment to this Annual Report in order to demonstrate how the maximum effluent concentrations of solution and active ingredient were calculated for each chemical.
- EPA recognizes that water-borne treatments may vary in the volume of the vessels treated, concentration, quantity of product, etc. Permittees must provide the information listed in the following tables for a reasonable worst case (i.e., maximum effluent concentration) scenario, not for each individual treatment.
- Permittees must submit this information and calculate the maximum effluent concentration for each water-borne chemical used during the past calendar year.
- See also Appendix D for the Chemical Log Sheet.

Static Bath Treatments		Iodine/Ovadine
Tank Volume		7.18 Liters
Desired Static Bath Treatment Concentration		73.7 ppm <del>ug/L</del>
Volume of Product Needed		56 mL <del>Liters Product</del>
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: 0.0000067 ppm Active Ingredient: $6.7 \times 10^{-5}$ ppm	Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	14,656,502 gallons	Specify Units
Maximum % of Facility Discharge Treated	0.0012%	% of Total Discharge

  

Flow-Through Treatments		Formalin - adult broodstock
Tank Volume		287,200 Liters
Calculated Flow Rate		1,077 Liters/Minute
Duration of Treatment		60 Minutes
Desired Flow-Through Treatment Concentration of Product		199.2 ppm <del>ug/L</del>
Amount of Product to Add Initially		N/A Liters Product
Amount of Product to Add During Treatment		227 mL/Minute
Total Volume of Product Needed		12.9 Liters Product
Maximum Effluent Concentration of: 1) Solution and 2) Active Ingredient	Solution: 0.00011 ppm Active Ingredient: 0.00011 ppm	Specify Units
Minimum Volume of Total (treated + untreated) Water Discharged from the Facility per day	6,625,440 gallons	Specify Units
Maximum % of Facility Discharge Treated	0.27%	% of Total Discharge

## Changes to the Facility or Operations

Describe any changes to the facility or operations since the last annual report.

None.

## Signature and Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly evaluate and gather the information submitted. Based on my inquiry of the person or persons, who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sara E Reese	Assistant Hatchery Manager
Printed name of person signing	Title
Sara E Reese	01/04/2021
Applicant Signature	Date Signed

## Submittal Information

Send the complete, signed information, along with any attachments, to the following address:

U.S. EPA Region 10, OWW-191  
 Washington Hatchery Annual Report  
 1200 Sixth Avenue, Suite 900  
 Seattle, WA 98101-3140

# WATER BORNE TREATMENT CALCULATIONS

## Static bath - Ovacine

$$\text{Tank volume: } 2 \text{ gallons} \times \frac{3.59 \text{ L}}{1 \text{ gall}} = 7.18 \text{ L}$$

Derived concentration and volume of product needed:

$$56 \text{ mL} = \frac{2 \text{ gallons} \times 73.7 \text{ ppm} \times 0.0038}{0.01 (1\% \text{ iodine})}$$

Maximum effluent concentration of solution:

$$\text{MEC} = 73.7 \text{ ppm} \times \frac{91 \text{ trays} \times 56 \text{ mL}}{5096 \text{ mL} \times 1 \text{ gallon}} = \frac{375,575.2}{3785} = \frac{99,227}{14,656,502}$$

minimum volume of total water discharged

$$\rightarrow 182 \text{ gallons} + 14,656,320 \text{ gallons}$$

$\uparrow$  91 trays x 2 gallons  
 $\uparrow$  water use on 08/19/2020

$$0.0000067 \text{ ppm}$$

Maximum effluent concentration of active ingredient:

$$0.0000067 \text{ ppm} \times 0.01 = 6.7 \times 10^{-8} \text{ ppm}$$

$\uparrow$   
 1% iodine

Maximum % of Facility Discharge treated:

$$\frac{182}{14,656,502} \times 100 = 0.0012\%$$

## low through - Formalin (castrol)

$$\text{V of product to add (mL)} = 150 \text{ ppm} \times 40 \text{ minutes} \times 185.9 \text{ ppm} \times 0.1038 = \frac{6357.8 \text{ mL}}{40 \text{ mins}} = 158.945 \text{ mL/min}$$

$$\text{MEC} = \frac{185.9 \text{ ppm} \times 1.68 \text{ gallons} \times 2 \text{ raceways}}{18,000 \text{ gallons} + 16,143,120 \text{ gallons}} = \frac{624.62}{16,161,120} = 0.00004 \text{ ppm}$$

minimum volume total water discharged

Formalin is 100% active

Maximum % of facility discharge treated

$$\frac{18,000}{16,161,120} \times 100 = 0.11\%$$

low through-formalin (kelt building)

$$\text{V of product to add (mL)} = 35 \text{ gpm} \times 60 \text{ minutes} \times 103.9 \text{ ppm} \times 0.0038 = \frac{1307.9 \text{ mL}}{60 \text{ mins}} = 21.8 \text{ mL/min}$$

$$\text{MEC} = \frac{103.9 \text{ ppm} \times 5.52 \text{ L} \times \frac{1 \text{ gall}}{3.59 \text{ L}}}{5086 \text{ gallons} + 7,052,354 \text{ gallons}} = \frac{252}{7,057,440} = 0.000036 \text{ ppm}$$

maximum % of Facility Discharge treated:

$$\frac{5086}{7,057,440} \times 100 = 0.07\%$$

Flow through-formalin (adult broodstock)

$$\text{V of product to add (mL)} = 300 \text{ gpm} \times 60 \text{ minutes} \times 199.2 \text{ ppm} \times 0.0038 = \frac{13625 \text{ mL}}{60 \text{ mins}} = 227 \text{ mL/min}$$

$$\text{MEC} = \frac{199.2 \text{ ppm} \times 3.6 \text{ gallons}}{18,000 \text{ gallons} + 6,625,440} = \frac{717.12}{6,643,440} = 0.00011 \text{ ppm}$$

Maximum % of Facility Discharge treated:

$$\frac{18,000}{6,643,440} \times 100 = 0.27\%$$